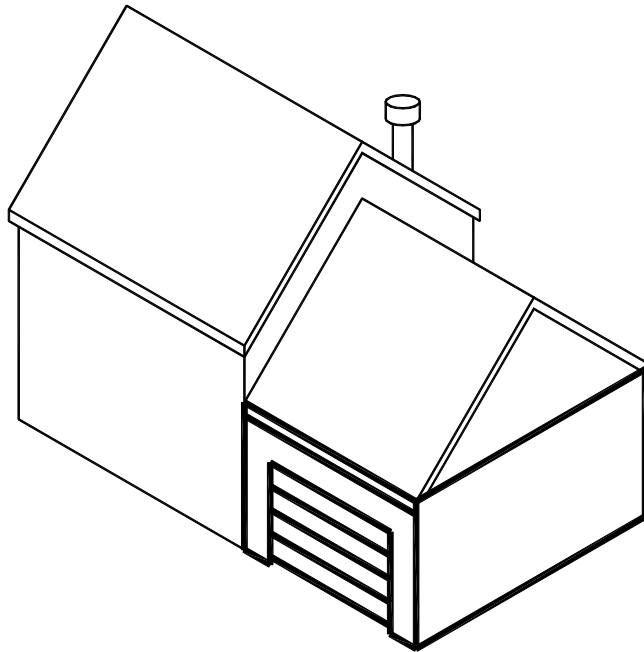


# Fairfax County

## Typical Carport Enclosure Details

for carports enclosed into garages and living spaces

*Based on the 2003 Virginia Uniform Statewide Building Code*



### CONTENTS

General Building Requirements .....	2
Egress Requirements .....	2
Foundation Requirements .....	3
Floor Requirements .....	4
Requirements for Wall Construction .....	4
Plumbing Requirements .....	6
Electrical Requirements .....	6

Carport Enclosures must be constructed in strict conformance with these details and the 2003 *International Residential Code (IRC)*. For requirements, details and information not contained herein, you must consult the IRC. You may be purchased an IRC from the Publications Center, 12000 Government Center Parkway, Suite 156, Fairfax, telephone 703-324-2974, TTY 711 or online at [www.iccsafe.org](http://www.iccsafe.org). A copy of these details is required to be available on the job site and available to the inspector during the construction and inspection process.



**Fairfax County**  
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Typical Carport Enclosure Details  
Based on the 2003 Virginia Uniform  
Statewide Building Code

## **GENERAL BUILDING REQUIREMENTS**

**ROOM SIZES:** Habitable rooms, excluding closets, hallways, laundries, storage spaces and bathrooms, shall have an area of not less than 70 sf and shall not be less than 7'-0" in any direction.

**HALLWAYS:** Hallways shall not be less than 36" in width.

**CEILING HEIGHTS:** Ceiling heights shall not be less than 7'-0". Structural members spaced at 4'-0" or more may project a maximum of 6" below the required ceiling height.

**BATHROOM VENTILATION:** Bathrooms shall be equipped with a mechanical ventilation system vented directly to the outside. Mechanical ventilation is not required when a window is provided with a minimum opening of 1.5 sf.

**STAIR PROTECTION:** Enclosed accessible space under stairs shall have walls and ceilings protected with  $\frac{1}{2}$ " drywall on the enclosed side.

### **SMOKE ALARMS:**

- **New areas:** smoke alarms (smoke detectors) shall be installed in all new bedrooms. New smoke alarms shall be interconnect so that when one is activated, all will sound. Smoke alarms must be hardwired with a battery backup.
- **In the remainder of the house:** if smoke alarms are not located on each floor, in each bedroom and in the vicinity of bedrooms, then one must be installed in such locations. Alarms need not be interconnect and may be battery powered only.

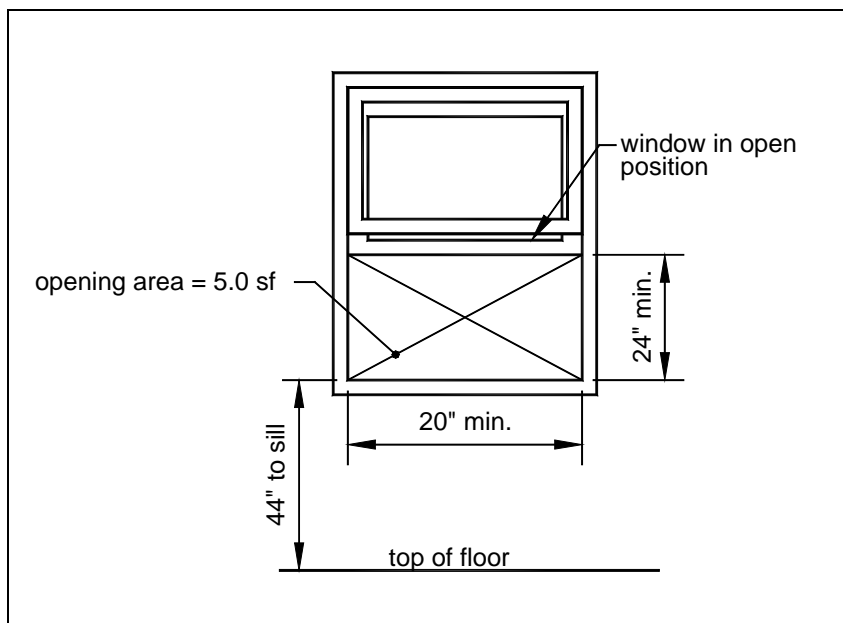
### **GARAGE SEPARATION:**

- Garages must be separated from living areas with a minimum of  $\frac{1}{2}$ " drywall applied to the garage side. Garages beneath living areas must have  $\frac{5}{8}$ ", type X drywall applied to the garage ceiling.
- Doors between an attached garage and adjacent living areas must be a  $1\frac{3}{8}$ " solid wood core door, a  $1\frac{3}{8}$ " honeycomb core steel door or a 20-minute fire-rated door.

## **EMERGENCY EGRESS REQUIREMENTS**

Emergency egress is required in all new bedrooms, and shall meet the following requirements.

- All doors and windows utilized as emergency egress must be operable from the inside without the need of a key or tool.
- The opening used for emergency egress must be a minimum of 5.0 sf.
- Windows must have a sill 44" or less above the finished floor.
- See FIGURE 1 for more opening requirements.



**FIGURE 1: WINDOW EGRESS REQUIREMENTS**

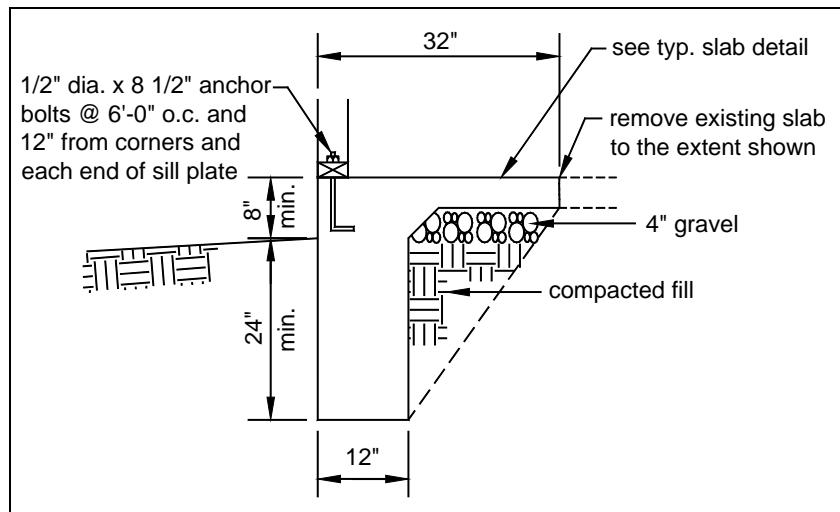


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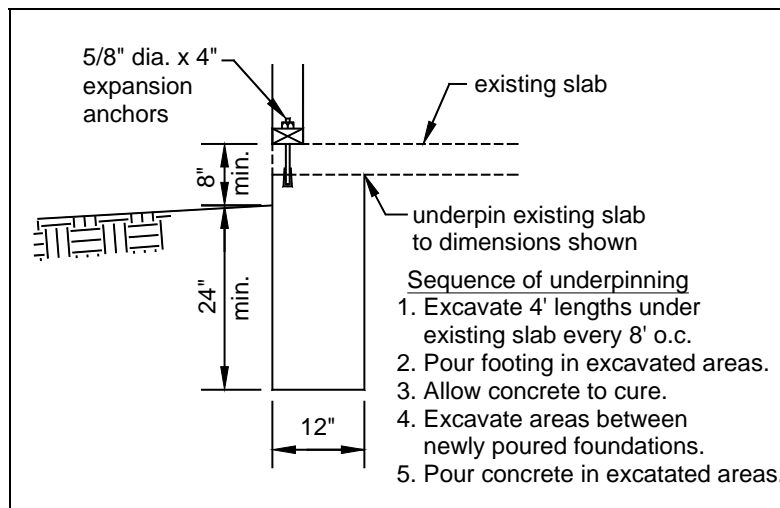
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Based on the 2003 Virginia Uniform  
Statewide Building Code

## FOUNDATION REQUIREMENTS

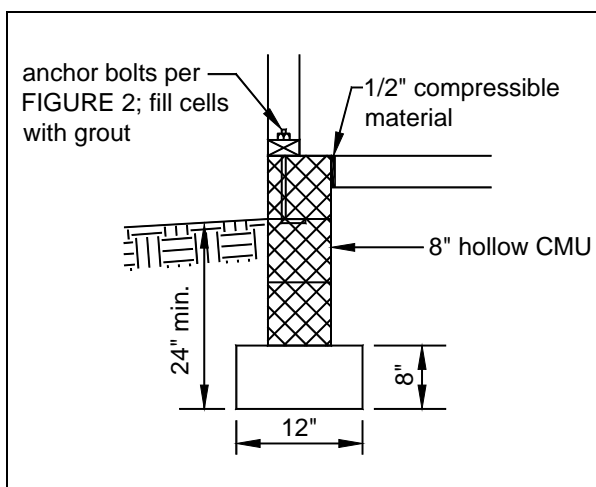
All exterior walls enclosing a carport must be supported on continuous concrete footings 24" deep. See FIGURE 2 - FIGURE 4.



**FIGURE 2: TYPICAL FOOTING/SLAB DETAIL**



**FIGURE 3: TYPICAL UNDERPINNING DETAIL**



**FIGURE 4: CMU FOUNDATION OPTION**

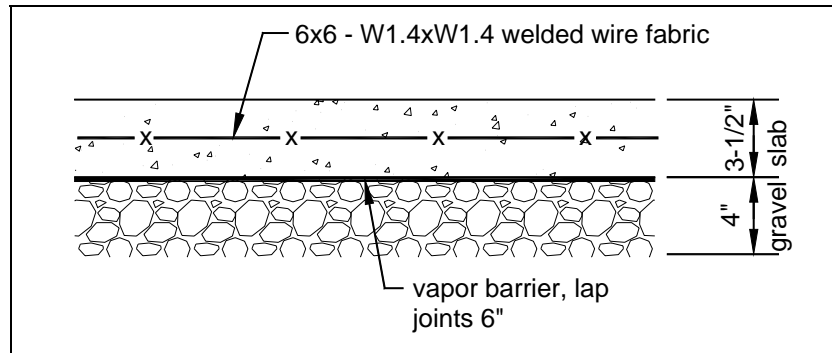


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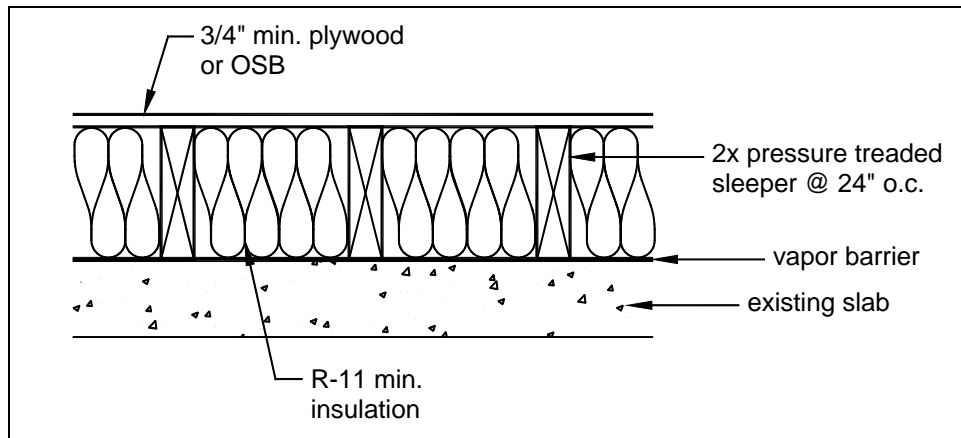
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Based on the 2003 Virginia Uniform  
Statewide Building Code

## FLOOR REQUIREMENTS

When converting a carport to a garage, the garage floor must slope towards the garage door. All new slabs associated with a carport enclosure must have a concrete compressive strength of 3,500 PSI. See FIGURE 5 for more information. Built up floors must meet the requirements shown in FIGURE 6. Apply a waterproofing sealant to the top surface of all slabs in carports converted to living spaces.



**FIGURE 5: TYPICAL SLAB-ON-GRADE**



**FIGURE 6: TYPICAL BUILT-UP FLOOR**

## REQUIREMENTS FOR WALL CONSTRUCTION

**STUDS:** Studs may be utility grade or better. Stud spacing shall be per TABLE 1, shall have a pressure treated bottom plate and can have a double top plate.

**TABLE 1: STUD SPACING**

Wall Finish Material	Stud spacing, inches on center
Drywall	16 or 24
Wood veneer, hardwood paneling	16

**ENERGY REQUIREMENTS:** Carports converted to living spaces must have the insulation values shown in TABLE 2.

**TABLE 2: INSULATION REQUIREMENTS**

Location	Value
Window/door U-factor*	0.36
Ceiling R-value	30
Wall R-value	13

\*Maximum area of window not to exceed 27% of total wall area.



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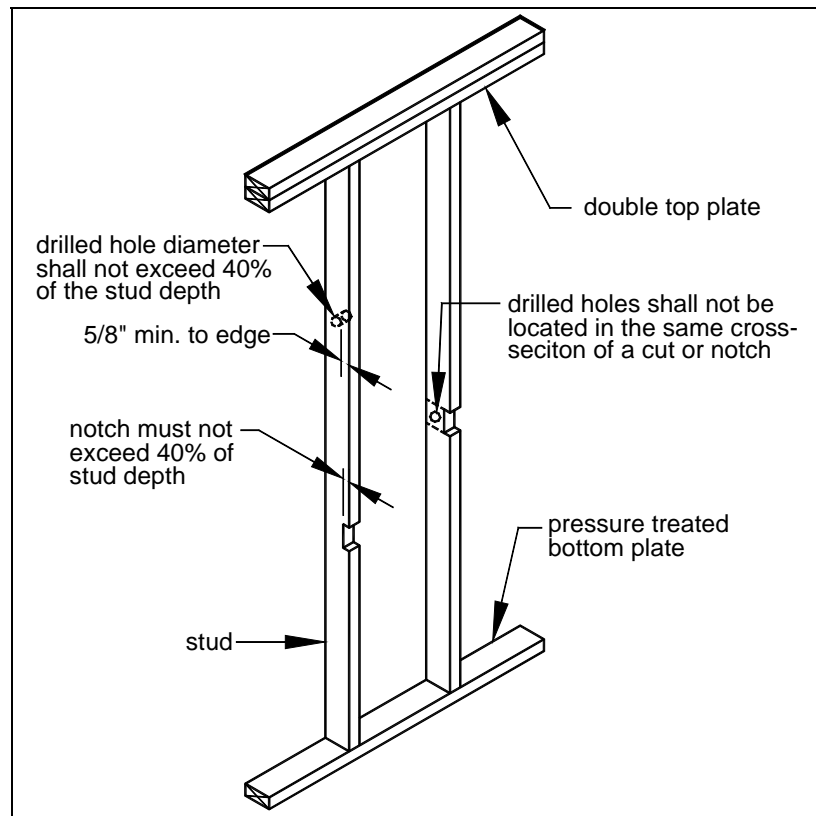
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Statewide Building Code

**ATTACHMENT REQUIREMENTS:** Wall construction shall be fastened in accordance with TABLE 3.

**TABLE 3: FASTENING SCHEDULE**

Connection	Nailing method
Top plate to stud	end nail, 16d @ 24"o.c.
Stud to bottom plate	toe nail, 2-16d
Bottom plate to floor	face nail, 6d (concrete nail) @ 16"o.c.
Top plate to existing roof construction	Toe nail, 2-16d @16"o.c.

**DRILLING AND NOTCHING STUDS:** Studs may be notched up to 40% of the stud width. Studs may be drilled up to a diameter equal to 40% of the stud width provided the edge of the hole is no closer than 5/8" to the edge of the stud, and the hole is not located in the same section as a cut or notch. See FIGURE 7.



**FIGURE 7: DRILLING & NOTCHING STUDS**

**HEADERS:** Size headers in new exterior non-bearing walls per TABLE 4. **PLEASE NOTE: ALTERATIONS TO EXISTING HEADERS OR EXISTING ROOF CONSTRUCTION ARE BEYOND THE SCOPE OF THESE TYPICAL DETAILS. IN SUCH CASES A FULL PLAN SUBMISSION IS REQUIRED.**

**TABLE 4: HEADER SIZE**

Header Size	Span length, feet
(2)2x4	4
(2)2x6	6
(2)2x8	10
(2)2x10	12
(2)2x12	16



**Fairfax County**  
**VIRGINIA**

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Statewide Building Code

**SHEATHING:** Exterior walls must be sheathed with  $1\frac{1}{2}$ " plywood or OSD. Each corner must have 4'-0" solid sheathed panels with no openings for windows or doors. This panel may be offset from corner a maximum of 12'-6" if a door or window is desired near the corners. Each side of a garage door must have a minimum 2'-0" solid sheathed panel. The sill plate to all solid sheathed panels must have a minimum of one anchor bolt or expansion anchor at each panel end.

### **PLUMBING REQUIREMENTS**

**SHOWERS:** Showers and shower compartments must meet the following requirements.

- Shower compartments must have a minimum total area of 900 in<sup>2</sup> and a minimum dimension of 30" in any direction.
- Hinged shower doors must open outward.
- All glass which encloses a shower must be safety glazed.
- Shower control valves must be scald resistant (in accordance with ASSE/ANSI 1016) with a hot water limit of 120°F.

**FIXTURE CLEARANCES:** Toilets, sinks, and showers shall have the minimum clearances listed below.

- 21" in front of sinks and toilets.
- 24" in front of shower stall opening.
- 4" between two adjacent sinks.
- 4" between a sink and a toilet.
- 4" between a sink and a wall.
- 2" between a sink and a bathtub.
- 15" clearance from a toilet's centerline to an adjacent fixture or wall on each side.

**DRAIN SIZE:** Fixture drain size must meet the dimensions noted below. All drains must be equipped with a strainer and stopper.

**TABLE 5: MINIMUM DRAIN SIZE**

Fixture	Diameter
Bathroom sink	1 $\frac{1}{4}$ "
Bathtubs	1 $\frac{1}{2}$ "
Sinks (other than bathroom)	1 $\frac{1}{2}$ "

### **ELECTRICAL REQUIREMENTS**

**BRANCH CIRCUITS:** Branch circuits must meet the requirements listed below. See TABLE 6 for more information.

- Use a 15 to 20 ampere rated branch circuit for general use purposes such as lighting and outlets.
- One "plugged-in" electrical device shall not exceed 80% of the circuit rating.
- Hardwired appliances or equipment may be included in a general use circuit provided its rating does not exceed 50% of the circuit rating.
- A dedicated 20 ampere branch circuit must be provided to serve a single bathroom.
- Circuits which serve bedroom outlets must have circuit breakers equipped as arc-fault circuit interrupters.
- A minimum of 2, 20 ampere rated branch circuits must be provided to carports converted to dining areas.



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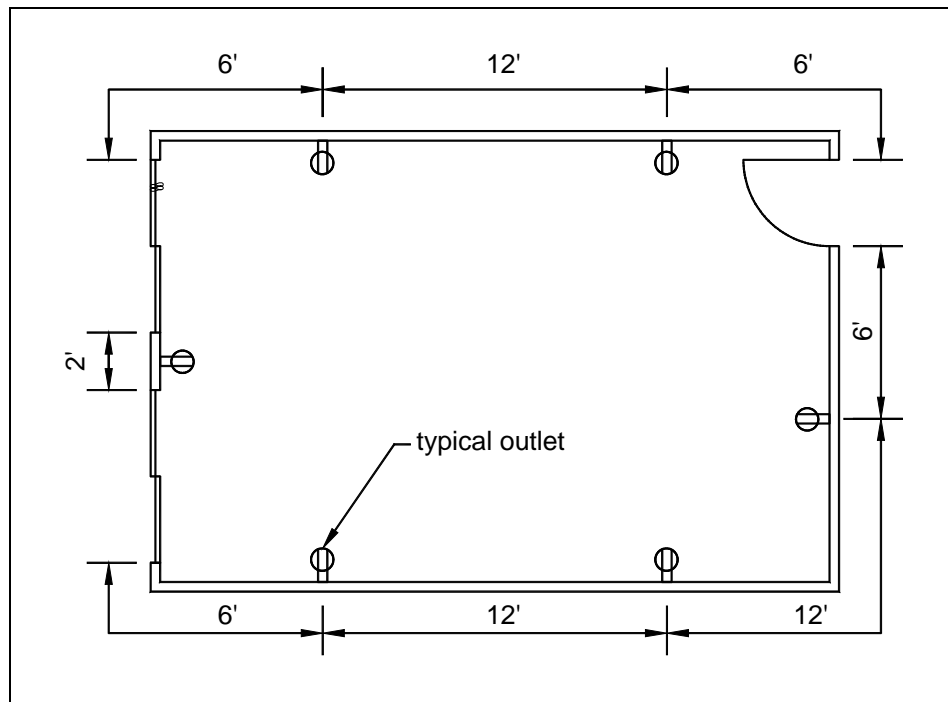
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Statewide Building Code

**TABLE 6: BRANCH CIRCUIT REQUIREMENTS**

	Circuit Rating		
	15 amp	20 amp	30 amp
Min. conductor size	14	12	10
Max. breaker size, ampere	15	20	30
Outlets rating, amperes	15 max.	15 or 20	30
Maximum load, amperes	15	20	30

**OUTLETS (RECEPTACLES):** Outlets must meet the requirements listed below.

- Outlets shall be placed so that no location along the floor/wall line is more than 6'-0" from an outlet. See FIGURE 8.
- The minimum wall length which requires an outlet is 2'-0".
- Kneewalls, built-in bars, and other fixed room dividers must be included in wall length for outlet spacing.
- Hallways more than 10'-0" long must have a minimum of one outlet.
- Outlets installed for specific appliances must be within 6'-0" of the appliance location.
- Bathrooms must have at least one outlet located on a wall adjacent and within 36" of the bathroom sink. All bathroom outlets must have ground fault circuit interrupter (GFCI) protection.
- At least one outlet must be provided to serve laundry appliances.
- All outlets shall be 125 volt, single phase, 15 and 20 ampere. All attached garages and all detached garages with electricity must have at least one GFCI, 125-volt, single-phase, 15- or 20-ampere outlet. All additional outlets must meet the same requirements except for inaccessible outlets such as those serving garage door openers.

**FIGURE 8: TYPICAL OUTLET DISTRIBUTION**

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**VIRGINIA**

Typical Carport Enclosure Details  
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Statewide Building Code

**LIGHTING REQUIREMENTS:** Lights must meet the requirements listed below.

- At least one switch controlled light must be provided in each room and hallway. A switch controlled outlet may be substituted in all rooms except bathrooms and hallways.
- At least one switch controlled or pull chain light must be provided in each storage area and at or near heating and air-conditioning appliances and equipment.
- Lighting fixtures must not be installed within 3'-0" horizontally and 8'-0" vertically of a bathtub rim or shower stall threshold. A light fixture may be installed above a shower area if it is constructed so that water cannot enter or accumulate in wiring areas and the lighting fixture is marked "suitable for wet locations."
- Light fixtures must be installed so that combustible materials are not subject to temperatures greater than 90°F. At least one wall switch controlled light must be installed in all attached garages and all detached garages with electricity.

**LIGHT FIXTURES IN CLOSETS:** The types of fixtures installed in clothes closets shall be limited to surface mounted or recessed incandescent fixtures with completely enclosed lamps, and surface mounted or recessed fluorescent fixtures. Incandescent fixtures with open or partially enclosed lamps and pendant fixtures or lamp holders are prohibited. See TABLE 7 for clearance requirements.

**TABLE 7: CLOSET LIGHT FIXTURE CLEARANCES**

Fixture Type	Bulb Type	
	Fluorescent	Incandescent*
Surface mounted	6	12
Recessed	6	6

\*Bulb must be within a completely enclosed lamp.

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